INFORMATION PROCESSING APPARATUS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an information processing apparatus, and in particular, to the information processing apparatuses such as a portable telephone and a PDA (Personal Digital Assistant).

[0003] 2. Description of the Prior Art

[0004] An information input apparatus in the past using a touch panel such as a portable telephone or a PDA can, as its greatest characteristic, display only necessary information on a liquid crystal display panel when necessary and thereby provide a simple and easy operating portion such as a button.

[0005] Incidentally, there are the cases where a malfunction occurs due to an unintended operation. In particular, in the case of the portable telephone, there are the cases where a transmission button is pushed by mistake while carrying it in a bag.

[0006] Here, Japanese Patent Laid-Open No. 2001-69223 discloses a technology for rendering a scroll operation easily and securely performable in vertical and horizontal directions respectively to prevent the malfunction.

[0007] According to the above patent laid-open, the portable telephone has an X-axis direction scroll operating portion for performing the scroll operation in the horizontal direction (X-axis direction) of a display screen and a Y-axis direction scroll operating portion for performing the scroll operation in the vertical direction (Y-axis direction) of the display screen in a lower part and a left side part of a display portion respectively. It describes that these operating portions are constituted to have a touch pad in long and thin shape so as to allow an instruction of the scroll operation independently in each direction.

[0008] In addition, Japanese Patent Laid-Open No. 2001-273080 discloses a technology to be applied to a portable information terminal apparatus, for example, for the sake of constituting it to accept various inputs by operating an operation element so as to divert it simply to various apparatuses.

[0009] According to the above patent laid-open, it is described that the operation of the operation element on a control panel is detected by the touch panel placed on an image display panel, and a processing program involved in this detection process is replaceable together with the control panel.

[0010] However, the technologies in the past perform the scroll operation and accept various inputs by operating the operation element, and so there are the cases where they block miniaturization, weight saving and low-profile making required of the portable information terminal such as the portable telephone or PDA.

[0011] Thus, an object of the present invention is to provide the information processing apparatus which does not block the miniaturization, weight saving and low-profile making and prevents the malfunction.

BRIEF SUMMARY OF THE INVENTION

[0012] To solve the above problem, the present invention is characterized by having a display portion for displaying an icon and slidable against an information processing apparatus proper, a contact detection portion for detecting contact with said icon displayed in said display portion, a slide detection portion for detecting a slide of said display portion against the information processing apparatus proper, and an execution portion for, in the case where said slide detection portion detects the slide of said display portion in a state in which said contact detection portion is detecting contact with said icon, starting an application of the icon and opening a file.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] **FIG. 1** is a schematic perspective view of an information input apparatus according to a first embodiment of the present invention;

[0014] **FIG. 2** is a schematic exploded perspective view of the information input apparatus according to **FIG. 1**;

[0015] **FIG. 3** are sectional views between A-A and between B-B in **FIG. 2**;

[0016] **FIG. 4** is a block diagram showing a schematic internal configuration of the information processing apparatus shown in **FIG. 1**;

[0017] **FIG. 5** is a flowchart showing an operation of the information processing apparatus shown in **FIG. 1**;

[0018] **FIG. 6** is a diagram for explaining operating situation of a touch panel portion **3** of the information processing apparatus shown in **FIG. 1**;

[0019] **FIG. 7** is a diagram showing sizes of the touch panel portion **3** and information processing apparatus proper **5** related to a second embodiment of the present invention; and

[0020] **FIG. 8** is a diagram showing the sizes of the touch panel portion **3** and information processing apparatus body **5** related to the second embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] Hereafter, embodiments of the present invention will be described by referring to the drawings.

[0022] **FIG. 1** is a schematic perspective view of an information input apparatus according to a first embodiment of the present invention. **FIG. 2** is a schematic exploded perspective view of the information input apparatus according to **FIG. 1**.

[0023] The information processing apparatus shown in **FIGS. 1 and 2** has an information processing apparatus body **5** and a touch panel portion **3** comprised of a display **1** for displaying an icon **4** and a touch panel **2** including a piezoelectric element.

[0024] Its essential operation is to slide the touch panel portion **3** against the information processing apparatus body **5** in horizontal and vertical directions when starting an application program and opening a file corresponding to the icon **4** displayed on the display **1**.